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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,718	09/15/2003	Nobuyuki Ito	CU-3360	1336

26530 7590 03/02/2006

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EXAMINER
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CLEVELAND, MICHAEL B

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 03/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/662,718

Applicant(s)

ITO ET AL.

Examiner

Michael Cleveland

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 7-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/28/2005 has been entered.

### *Election/Restrictions*

2. Claims 7-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/14/2004.

### *Claim Objections*

3. Claim 4 is objected to because of the following informalities: "does" is misspelled in line 3. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification as filed does not fairly provide support for heating *while moving* a heating device in the Z- direction relative to the substrate surface (emphasis added by examiner).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase (U.S. Patent 6,730,357, hereafter '357) in view of Gordon et al. (U.S. Patent 4,811,038, hereafter '038) and Nanto et al. (U.S. Patent 5,921,836, hereafter '836).

'357 teaches a method for manufacturing an organic EL display by an ink jet method (col. 1, lines 17-25), wherein a uniform organic EL layer is formed by sequentially continuously carrying out processes of discharge-placing at least an organic EL material in a form of a solution on a substrate; and drying the organic EL material in a form of ink placed on the substrate by heating (col. 7, lines 3-67).

'357 is discussed above, but does not explicitly teach heating while relatively moving a heating device in X, Y, and Z directions to the substrate. However, '038 teaches that the substrate ink-jet ink may be heated by radiant heaters attached to and at the same level as the nozzles that travel with the nozzles (col. 6, lines 59-68). Also, '836 teaches that, when printing the red, green, and blue materials for pixels of electroluminescent devices such as plasma display screens, the nozzles may scan in the X- and Y- directions to provide complete coverage of the screen (col. 8, lines 45-61). Further, the nozzles may be moved in the z-direction to keep the clearance between the substrate and nozzles constant even when the substrate surface is not uniformly flat (col. 6, lines 3-14, 42-60; col. 7, lines 8-38). Therefore, taking the references as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have mounted radiant heaters on either side of the nozzles in order to have provided the drying with a reasonable expectation of success because '038 teaches that such is a suitable arrangement of nozzles and heaters to dry inks deposited on substrates, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to have moved the nozzles (and therefore the attached heaters) in the X-, Y-, and Z- directions relative to the

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substrate in order to have provided full coverage of all desired pixels and to have maintained a constant clearance between the substrate and the nozzles during printing. with the substrate compare to the ink-jet nozzle and an infrared heater over the substrate.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase '357 in view of Gordon '038 and Nanto '836, as applied to claim 1 above, and further in view of Pham et al. (U.S. Patent Application Publication 2002/0127344, hereafter '344).

'357 is discussed above, but does not explicitly teach that the temperature of the substrate does not rise. '344 teaches that the substrate may already be heated at the time of deposition to accelerate the evaporation of the solvent [0006]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have deposited the ink of '357 on an already heated substrate in order to have accelerated the drying process. Thus, the temperature of the substrate would not rise during application of the ink, particularly in view of the teachings of '357 that the substrate temperature has an effect on the process (col. 7, lines 31-33), thereby motivating keeping the substrate temperature constant in order to ensure process repeatability.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase '357 in view of Gordon '038 and Nanto '836, as applied to claim 1 above, and further in view of Noguchi et al. (U.S. Patent 5,606,356, hereafter '356).

'357, '038, and '836 are discussed above. '836 teaches that radiant heaters are used, but does not explicitly teach that they are infrared heaters. However, the Examiner takes Official Notice that infrared heat is a notoriously well known type of radiant heat used to dry inks. See, e.g., '356, col. 9, lines 11-19. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used infrared heat as the particular radiant heat of '357, '038, and '836 with a reasonable expectation of success because infrared heat is a notoriously well known type of radiant heat used to dry inks. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

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10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase '357 in view of Gordon '038 and Nanto '836, as applied to claim 1 above, and further in view of Mian et al. (U.S. Patent 6,319,469, hereafter '469).

'357 is discussed above, but does not explicitly teach that the heater is a Peltier element. However, '357 is open to the use of other heating mechanisms (col. 7, lines 62-63). '469 teaches that Peltier heat elements are operative for heating (col. 50, lines 53-59). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a Peltier heat element as the particular heater of '357 with a reasonable expectation of success because '469 teaches that it is a suitable tool for providing heat. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07.

#### ***Response to Arguments***

11. Applicant's arguments, see p. 8, filed 11/17/2005, with respect to the rejection(s) of claim(s) 1-6 under 35 USC 103 have been fully considered and are persuasive in view of the entered amendment. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Gordon '038 and Nanto '836.

#### ***Conclusion***


12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ushirogouchi et al. (U.S. Patent Application Publication 2003/0231234) is cited as an example of heating ink jet substrates. Kojima et al. (U.S. Patent Application Publication 2002/0187272, paragraph [0030]) is cited of interest for its teachings regarding moving nozzles and substrates relative to one another.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cleveland whose telephone number is (571) 272-1418. The examiner can normally be reached on Monday-Thursday, 7-5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Michael Cleveland  
Primary Examiner  
Art Unit 1762

2/27/2006